

Facility Name: **Griffin Lumber Company**
City: Cordele
County: Crisp
AIRS #: 2421-081-0008-V-03-0

Application #: TV-46928
Date Application Received: April 18, 2017
Permit No: 2421-081-0008-V-03-0

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Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

I. Facility Description**A. Facility Identification**

1. Facility Name: Griffin Lumber Company
2. Parent/Holding Company Name: Griffin Lumber Company
3. Previous and/or Other Name(s): N/A
4. Facility Location: 1603 Drayton Rd. Cordele, GA 31015 (Crisp County)
5. Attainment, Non-attainment Area Location, or Contributing Area

This facility is located in an attainment area for all pollutants.

B. Site Determination

Southland Wood Products is a small, adjacent facility owned by the Permittee. This facility has a cyclone for sawdust recovery from cutting and grinding lumber. The cutters and grinders are electrically powered and are not sources of air pollution. This is a small source that does not require a permit.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/Effectiveness	Purpose of Issuance
2421-081-0008-V-02-0	10/22/2012	Title V Permit Renewal
2421-081-0008-V-02-1	5/26/2017	502(b)(10) Change

D. Process Description

1. SIC Codes(s): 2421 – Saw Mills and Planing Mills

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the

language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

2. Description of Product(s)

Griffin Lumber Company is a standard lumber mill producing non-dried wood products and kiln-dry lumber for construction purposes. Other products that are produced as a result of the process include wood bark, sawdust and wood chips.

3. Overall Facility Process Description

The lumber making process starts with tree-length logs (southern yellow pine), which are processed into lumber by debarking, sawing, kiln drying, and planing. The lumber is bundled for shipment. Non-dried wood is produced by omitting the kiln drying stage. Sawdust generated by the woodworking operation is collected using vibrating conveyors and used as fuel for the kiln. The heating unit (sloping grate gasifier) and the drying kiln are considered separate since the gasifier is a fuel burning source when it is discharging through the abort stack, whereas the kiln heated directly with burner exhaust is process equipment.

Sawmill:

The facility receives raw logs (southern yellow pine) from tree harvesting operations. These logs are unloaded and stacked with mobile equipment and handled at the sawmill. The logs are debarked and then cut to optimal length. The logs are then sawn to a rectangular shape. The slab ends are reduced to chips or remanufactured into 1" x 4" dimensional lumber. The squared logs are then sawn with band and/or circular saws to the optimal dimensions. This green lumber is then dried in the drying-kiln or sold as green lumber without kiln drying. The green sawdust is used as fuel for the gasifier.

Conveyors and Chippers:

Bark from the debarker is mechanically conveyed to a bark holding area for transportation to offsite purchasers. Chips are conveyed to a chip storage area pneumatically. The chips are sold to offsite customers.

The facility has a large wood chipper that receives all of the scrap and dust from the sawmill via vibrating conveyors. The chipper discharges to one large vibrating screen that separates the fine dust from the chips, which are transferred to the chip pile. The dust is transferred to the gasifier fuel silo via belt conveyor.

Lumber Drying Kiln:

The green rough-sawn lumber, having a free moisture content of approximately 55%, is stacked and fed continuously to a drying kiln for drying to approximately 19% moisture content. The facility inputs 113,000 MBF/ year. The drying kiln is a direct fired, dual path, continuous drying kiln. During the drying process, Volatile Organic Compounds (VOCs) and Hazardous Air

Pollutants (HAPs) are emitted from the kiln. The kiln is heated by combustion gases from the sloping grate wood gasifier.

Gasifier:

The gasifier, installed in September 2017, has a capacity of 31.5 MMBTU/hr. The gasifier burns green sawdust to provide heated air to the drying kiln.

Planer Mill:

The dried lumber is planed in the planer mill, which smooths each surface on each board. This produces shavings, which are pneumatically conveyed to a bin for transportation to purchasers or for use as fuel in the gasifier. This pneumatic system is controlled with a high efficiency cyclone. Sawdust and planer shavings are sold to particleboard manufacturers, to make animal bedding and to manufacture litter absorbent; or used as fuel onsite in the wood gasifier. The lumber is then graded and bundled for shipment.

4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

E. Regulatory Status

1. PSD/NSR

The facility is a minor source for PSD/NSR regulations. The PSD threshold for lumbermills is 250 tpy. Currently, there are no PSD/NSR review avoidance limits. The potential VOC and particulate matter (PM) emissions are greater than 100 tpy which resulted in the facility needing a Title V permit.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓	✓		
PM ₁₀	✓	✓		
PM _{2.5}	✓	✓		
SO ₂	✓			✓
VOC	✓	✓		
NO _x	✓			✓
CO	✓			✓
TRS	n/a			
H ₂ S	n/a			
Individual HAP	✓			✓
Total HAPs	✓			✓

3. MACT Standards

The total HAPs emitted at the facility are well under the 25 tpy threshold and the emissions of each individual HAP is well under the 10 tpy threshold. This results in the source being minor for HAPs, therefore, no major source MACT Standards apply.

The minor source boiler MACT (40 CFR 63 Subpart JJJJJ) does not apply to the gasifier because the unit does not meet the definition of a boiler under the subpart.

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	no
Program Code 8 – Part 61 NESHAP	no
Program Code 9 - NSPS	no
Program Code M – Part 63 NESHAP	no
Program Code V – Title V	yes

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

None applicable.

B. Applicable Rules and Regulations

Not applicable.

C. Compliance Status

Not applicable.

D. Permit Conditions

None.

III. Regulated Equipment Requirements

A. Equipment List for the Process

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
DB01	Debarker	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n)	3.4.1, 3.4.2, 3.4.3, 6.2.1*	N/A	None
SM01	Sawmill	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n)	3.4.1, 3.4.2, 3.4.3, 6.2.1*	N/A	None
DK01	Lumber Drying Kiln	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n)	3.4.1, 3.4.2, 3.4.3, 6.2.1*	N/A	None
GS01	Wood-Fired Gasifier	391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	3.4.2, 3.4.4*	N/A	None
PM01	Planer Mill	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n)	3.4.1, 3.4.2, 3.4.3, 3.5.1, 5.2.1, 6.1.7, 6.2.1*	CY03	Cyclone
SB01	Planer Mill Shavings Bin	391-3-1-.02(2)(b) 391-3-1-.02(2)(n)	3.4.2, 3.4.3, 3.5.1, 5.2.1, 6.1.7, 6.2.1*	CY03	Cyclone
CH01	Wood Chipper	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n)	3.4.1, 3.4.2, 3.4.3, 6.2.1*	N/A	None

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards and corresponding permit conditions are intended as a compliance tool and may not be definitive.

B. Equipment & Rule Applicability

Emission and Operating Caps:

There are no emission and operating caps for this facility.

Rules and Regulations Assessment:

Lumber Dry Kiln (DK01)

Dry Kiln (ID No. DK01), constructed in 1994, uses the combustion gases from the 31.5 MMBtu/hr Sloping Grate Wood Gasifier (ID No. GS01) for heat and dries the wet green rough sawn lumber from approximately 55% moisture content to the desired content of 19%. During the drying process, VOCs and some PM are emitted.

VOCs are not regulated by any Georgia Rule, but PM is subject to Georgia Rule for Air Quality Control 391-3-1-.02(2)(e) "Particulate Emission from Manufacturing Processes". The allowable PM emission rate is expressed by the following equation:

$E = 4.1 P^{0.67}$, Where E equals the allowable PM emission rate in pounds per hour and P equals the maximum process input weight for rates up to and including 30 tons per hour.

The Title V application indicates that the dry kiln can dry 47.2 tons/hr of the green rough sawn lumber. Wood is dried in a continuous fashion in the drying kiln. At maximum capacity, the Rule (e) allowable emissions of PM are 34.1 lb/hr, as calculated below:

$$P = 47.2 \text{ tph @ 55\% moisture} \\ = (47.2) [1 - (0.55 - 0.05)] = (47.2) [1 - 0.50] = 23.6 \text{ tph @ 5\% moisture.}$$

$$E = 4.1 P^{0.67} = 4.1(23.6 \text{ tph})^{0.67} = 34.1 \text{ lb/hr}$$

NCASI (May 2005) indicates that the PM emission factor for southern yellow pine is 0.14 lb per MBF of lumber produced. At 309 MBF/day, the PM emissions are 43.3 lb/day or 1.8 lb/hour which is a small fraction (5%) of the allowable PM emission rate of 34.1 lb/hr per Georgia Rule (e). Thus, PM emissions from the drying kiln are expected to comply with Georgia Rule (e) PM emission limit. It is also expected that low PM emissions will allow the kilns to easily comply with the 40% opacity limit in Georgia Rule (b).

Planer Mill Shavings System (PM01)

The planer mill shavings system handles the shavings generated by planing. The planer mill processes 52.2 tons/hr (up to 261,050 tpy) of rough sawn dried lumber, having 19% average free moisture content. The emissions of sawdust and shavings are controlled by the Cyclone (ID No. CY03). This process is subject to Georgia Rule for Air Quality Control 391-3-1-.02(2)(e)

“Particulate Emission from Manufacturing Processes”. The allowable PM emission rate is expressed by the following equation:

$E = 55 P^{0.11} - 40$, Where E equals the allowable PM emission rate in pounds per hour and P equals the maximum process input weight for rates above 30 tons per hour.

NOTE: The Title V Application indicates that the facility processes 52.2 tons/hr of rough sawn dried lumber (19% moisture) in this unit. Per Rule (e) the allowable PM emission rate is calculated, after removing free moisture, as follows:

$P = (52.2 \text{ tons/hr @ 19\% moisture}) [1 - (0.19 - 0.05)] = 44.9 \text{ tons/hr @ 5\% moisture.}$

$E = 55 (44.9)^{0.11} - 40 = 83.6 - 40.0 = 43.6 \text{ lb/hr}$

The emissions of PM can be estimated using AP-42 (Lumber and Wood Products Manufacturing) emission factors of 0.024 and 0.35 lb/ton of logs processed in log debarking and log sawing operations respectively. The expected emissions of PM can be estimated as follows:

$PTE = (0.374 \text{ lb/ton}) (52.2 \text{ tph, actual input at 19\% moisture}) = 19.5 \text{ lb/hr}$

Dried lumber is planed to size and the planer shavings are continuously vacuumed from the planer mill and conveyed by air to a cyclone to drop out the shavings into the shavings bin. Emissions from the Planer Mill (ID No. PM01) are estimated at 0.34 lb/hour after the Cyclone (IDNo.CY03).

Thus the PM emissions, while estimated using AP-42 factors to be 19.5 lb/hr, could be as low as 0.34 lb/hr after the cyclone. Both are less than the allowable emission rate of 43.6 lb/hr. Hence, compliance with Rule (e) and (b) is expected. The facility is required to monitor the cyclone to ensure that it is operating efficiently.

Debarker (DB01), Sawmill (SM01) and Wood Chipper (CH01)

The Debarker (ID No. DB01), Sawmill (ID No. SM01) and Wood Chipper are subject to Georgia rule (b) and (e). Due to the nature of the facility’s operations, compliance is expected.

Wood Fired Gasifier (GS01)

The Wood Fired Gasifier (ID No. GS01) is subject to Georgia rule (b) and (g). Wood fuels the gasifier and allows for compliance to be expected due to the low sulfur content.

Other Fugitive Sources

The Permittee listed debarking, sawing, drying and planing operations in the list of “Emission Units- Fugitive Emissions.” These sources are subject to Georgia rule (n), “Fugitive Dust.” Rule (n) requires the facility to take all reasonable precautions to prevent dust from becoming airborne from these emission sources and to limit fugitive dust visible emissions to less than 20% opacity.

B. Permit Conditions

Condition 3.4.1 specifies the allowable PM emission rate from the Drying Kiln (ID No. DK01), Wood Chipper (ID No. CH01), Debarker (ID No. DB01), Sawmill (ID No. SM01) and the Planer Mill (ID No. PM01), according to Georgia rule (e).

Condition 3.4.2 specifies the opacity limit of 40% from the Debarker (ID No. DB01), Sawmill (ID No. SM01), Drying Kiln (ID No. DK01), Gasifier (ID No. GS01), Planer Mill (ID No. PM01), Planer Mill Shavings Bin (ID No. SB01) and the Wood Chipper (ID No. CH01), according to Georgia Rule (b).

Condition 3.4.3 specifies the opacity limit of fugitive emissions to be 20% from the Lumber Mill according to Georgia Rule (n).

Condition 3.4.4 specifies that the Permittee shall not utilize any fuel with more than 2.5% sulfur for the Gasifier (ID No. GS01) according to Georgia Rule (g).

*NOTE: All permit conditions have been updated to the language of the most recent permit template.

IV. Testing Requirements (with Associated Record Keeping and Reporting)**A. General Testing Requirements**

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

Not applicable.

V. Monitoring Requirements**A. General Monitoring Requirements**

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

Condition 5.2.1 requires the Permittee to perform weekly inspections on the cyclone to ensure it is free of holes and operating correctly.

C. Compliance Assurance Monitoring (CAM)

Not Applicable.

VI. Record Keeping and Reporting Requirements**A. General Record Keeping and Reporting Requirements**

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

B. Specific Record Keeping and Reporting Requirements

Condition 6.1.7 requires the Permittee to report any holes observed or operational malfunctions during cyclone inspections, as an excursion.

Condition 6.2.1 requires the Permittee to keep records of all fugitive dust mitigation efforts at the facility.

VII. Specific Requirements**A. Operational Flexibility**

Not applicable.

B. Alternative Requirements

Not applicable.

C. Insignificant Activities

Refer to <http://gatl.georgiaair.org/GATV/default.asp> for the Online Title V Application.

Refer to the following forms in the Title V permit application:

- Form D.1 (Insignificant Activities Checklist)
- Form D.2 (Generic Emissions Groups)
- Form D.3 (Generic Fuel Burning Equipment)
- Form D.6 (Insignificant Activities Based on Emission Levels of the Title V permit application)

D. Temporary Sources

Not applicable.

E. Short-Term Activities

Not applicable.

F. Compliance Schedule/Progress Reports

Not applicable.

G. Emissions Trading

Not applicable.

H. Acid Rain Requirements

Not applicable.

I. Stratospheric Ozone Protection Requirements

The facility is not subject to Title VI requirements.

J. Pollution Prevention

Not applicable.

K. Specific Conditions

Not applicable.

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

